UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: MAY 0 1 2018

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
CNX Gas Corporation, Various cities, Ohio

FROM: Shilpa Patel, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Chief
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: CNX Gas Corporation/Consol Energy

Facility Location:

Well Pad Name	GPS Latitude	GPS Longitude
Noble 33	39.7377	-81.4182
Noble 11	39.7457	-81.4143
Noble 36	39.7583	-81.3916
Noble 34	39.7928	-81.4168
Noble 30	39.8185	-81.3956
Noble 39	39.8081	-81.4031
Noble 16	39.8485	-81.3977
Noble 18	39.8372	-81.3927
Noble 19	39.8376	-81.3803

Date of Inspection: 5/16/17 and 5/17/17

EPA Inspector(s):
1. Shilpa Patel, Environmental Engineer
2. Jason Schenandoah, Environmental Engineer

Other Attendees
1. Pete Nickel, Operations Superintendent

2. Kevin Ice, Safety Supervisor Ohio Gas Operations
3. Cody Craker, Operations Manager

Purpose of Inspection: Assess vapor capture and control system's compliance with NSPS Subparts OOOO/OOOOa and permit conditions

Facility Type: Oil and Gas well pad

Regulations Central to Inspection: NSPS OOOO/OOOOa and state operating permit

Inspection Type:

☐ Unannounced Inspection
☒ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

The following information was obtained verbally from attendees unless otherwise noted.

Process Description:
At a well pad, an oil/gas/water emulsion is extracted from the formation through one or multiple wells. The emulsion goes to a separator, from which the gas is sent to the sales line and the liquids are piped to 400-barrel, atmospheric pressure, fixed-roof tanks on-site. Each liquid type, condensate and water, has dedicate tanks. Each set of dedicated tanks are connected so the liquids can be equalized within the group. Each tank may have a "thief" hatch, which is spring loaded to enable pressure relief, on top for occasionally gaining access to the liquid. Sites with condensate storage may have an additional hatch on each tank for emergency pressure relief capabilities, referred to as the "emergency PRV" or "emergency hatch." The hatches and one or more pressure relief devices are set to relieve pressure should the pressure due to flashing, working, or breathing emissions get too high for the tank or vapor collection system and combustor, if present, to accommodate. More specifically, the hatches and pressure relief devices on the tanks should remain closed unless the pressures exceed the pressure set points.

We used a FLIR GF320 infrared camera to observe and record organic compound emissions, and a PhoCheck Tiger PID to confirm that emissions observed contain volatile organic emissions (VOCs). When VOC emissions were observed, the locations are noted in the digital image log located in Appendix A.

TOUR INFORMATION

EPA toured the facility: Yes

INSPECTION DATE: MAY 16, 2017

Location: **Noble 33**
Arrival Time: **1:20 PM**
Departure Time: **2:10 PM**

Data Collected and Observations:

Nobel 33 has 3 wells operated with plunger lifts. The wells have been producing for the past 4 years. The site uses choke to reduce the pressure. The pressure during the visit was approximately 150 psi at the well head. The dump intervals are able to be manually adjusted. The site has three condensate tanks and three process water tanks. Each set of tanks is filled through the first tanks and then equalized to the other tanks. The tanks had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 100). The vapor collection system had a pressure relief valve (PRV). EPA detected VOCs with the FLIR camera and PID, as well as by smell. The tank battery was operating at a pressure of 0.15 psi. The PRV set point is set lower than the Enardo thief hatch. The combustor temp was 1814 °F. CNX claimed that the thief hatch seals were replaced last week.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- PID readings (See Appendix)

Location: **Noble 11**
Arrival Time: **2:32 PM**
Departure Time: **3:00 PM**

Data Collected and Observations:

Nobel 11 has three condensate tanks and three process water tanks. Each set of tanks is filled through the first tanks and then equalized to the other tanks. The tanks had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 100). The vapor collection system had a PRV. EPA detected VOCs with the FLIR camera and PID, as well as by smell. The tank battery was operating at a pressure of 0.1 psi. The PRV set point is set lower than the Enardo thief hatch. Noble 11 like Noble 33 did not have weighted hatches and the thief hatches did not have a "neck" or flange.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- PID readings (See Appendix)

Location: **Noble 36**
Arrival Time: **3:23 PM**
Departure Time: **3:40 PM**

Data Collected and Observations:

Nobel 36 has five condensate tanks and four process water tanks. This site can fill into any tank individually. Normally, the condensate is sent directly to Blue Racer. Each tank had a Enardo thief hatch, an emergency hatch, and is connected to vapor collection system and a combustor (Arbutec 200). The Arbutec 200 has a higher flow rate capacity than the Arbutec 100. The vapor collection system had a PRV. EPA detected VOCs with the FLIR camera and PID, as well as by smell. The tank battery was operating at a pressure of 4.3 oz. The emergency hatch's set point is 14 oz., the PRV's set point is 12 oz. and the thief hatch's set point is 16 oz.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- PID readings (See Appendix)

Location: **Noble 34**
Arrival Time: **4:25 PM**
Departure Time: **4:40 PM**

Data Collected and Observations:

Nobel 34 has four wells at this site and most of the condensate is sent to Blue Racer. All the wells are free flowing. The site has three condensate tanks and three process water tanks. Each set of tanks is filled through the first tanks and then equalized to the other tanks. The tanks had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 200). The vapor collection system had a PRV. EPA detected VOCs with the FLIR camera and PID as well as by smell. The tank battery was operating at a pressure of 2.5 oz. The vapors from the tank battery will be routed to the combustor at about a pressure of 3.5 oz.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- PID readings (See Appendix)

condensate is sent directly to Blue Racer. The site has three condensate tanks and three process tanks. Each set of tanks is filled through the first tanks and then equalized to the other tanks. The tanks had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 100). The vapor collection system had a PRV. EPA detected VOCs with the FLIR camera and PID, as well as by smell. The tank battery was operating at a pressure of 0.3 psi. Kevin asked if the PID picked up VOC concentrations from the grease on the thief hatches. EPA took a reading close to the grease and it was 0.265 ppm.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- PID readings (See Appendix)

Location: **Noble 18**
Arrival Time: **9:25 AM**
Departure Time: **9:38 AM**

Data Collected and Observations:

Nobel 18 has five free flowing wells and sends the condensate down the line for further processing. The tanks each had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 200). The vapor collection system had a PRV. The tank battery was operating at a pressure of 3.5 oz.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: **Noble 19**
Arrival Time: **9:51 AM**
Departure Time: **10:15 AM**

Data Collected and Observations:

Nobel 19 had three free flowing wells. The site had four condensate tanks and three process water tanks. Each set of tanks is filled through the first tanks and then equalized to the other tanks. The tanks had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 100). The vapor collection system had a PRV. The tank battery was operating at a pressure of 2.5 oz.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: **Noble 30**
Arrival Time: **4:58 PM**
Departure Time: **5:18 PM**

Data Collected and Observations:

Nobel 30 has three free flowing wells and sends its condensate to Blue Racer. The site has three condensate tanks and three process water tanks. Each set of tanks is filled through the first tanks and then equalized to the other tanks. The tanks had an Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 100). The vapor collection system had a PRV. EPA detected VOCs with the FLIR camera and PID as well as by smell. The tank battery was operating at a pressure of 2.5 oz.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- PID readings (See Appendix)

Location: **Noble 39**
Arrival Time: **5:32 PM**
Departure Time:

Data Collected and Observations:

Nobel 39 has four free flowing wells and five tanks in its tank battery. The site has been producing for approximately 15 months. The condensate line goes directly to Blue Racer. The tanks had a Enardo thief hatch and were connected to a vapor collection system and a combustor (Arbutec 200). The vapor collection system had a PRV.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

INSEPECTION DATE: MAY 17, 2017

Location: **Noble 16**
Arrival Time: **8:35 AM**
Departure Time: 8:55 AM

Data Collected and Observations:

Nobel 16 has two free flowing wells that have been producing for the last three years. One well has a pressure reading of 180 psi and the other has pressure reading of 220 psi. The

CLOSING CONFERENCE

Requested documents:

- Maintenance records for Noble 11 and Noble 33
- NSPS OOOO reports
- PERs for the last two years submitted to Ohio EPA
- Pressurized liquid sampling analysis
- NSPS OOOO/OOOOa applicability determination for all sites
- PTE calculations for permits
- PTE calculations for tanks

Concerns: EPA informed CNX that the older tank batteries (Noble 11 and 33) that did not have a "neck" or flange installed with the thief hatch did not seal as well as the ones that had the "neck" or flange. CNX request a phone conference after EPA reviews the records submitted.

SIGNATURES

Report Author: Shefa Patel Date: 5/1/18

Section Chief: Brian Dickens Date: 5/1/18

Facility Name: CNX Gas Corporation
Facility Location: Various cities, Ohio
Date of Inspection: 5/16/17 and 5/17/17

APPENDICES AND ATTACHMENTS

1. APPENDIX A: DIGITAL IMAGE LOG

2. APPENDIX B: FIELD MEASUREMENT DATA

Facility Name: CNX Gas Corporation
Facility Location: Various cities, Ohio
Date of Inspection: 5/16/17 and 5/17/17

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Shilpa Patel	2. **Date(s) of Inspection:** 5/16/17 and 5/17/17
3. **Company/Facility Name:** CNX Gas Corporation	4. **Street Address, City, State:** Various cities, Ohio
5. **Number of Images:** 21	6. **Archival Record Location:** CD Label: CNX 2017 EPA Air Inspection (CBI)

Image Number	File Name	Date and Time (incl. time zone and DST)	Description of Image
1	MOV_1811.mp4	5/16/2017	Noble 33: Process Water Tank 1 and Condensate Tank 1
2	MOV_1812.mp4	5/16/2017	Noble 33: Process Water Tank 2 and Condensate Tank 2
3	MOV_1813.mp4	5/16/2017	Noble 33: Process Water Tank 3 and Condensate Tank 3
4	MOV_1814.mp4	5/16/2017	Noble 33: Combustor
5	MOV_1815.mp4	5/16/2017	File Error
6	MOV_1816.mp4	5/16/2017	Noble 11: Process Water Tank 2
7	MOV_1817.mp4	5/16/2017	Noble 11: Condensate Tank 2
8	MOV_1818.mp4	5/16/2017	Noble 11: Process Water Tank 3
9	MOV_1819.mp4	5/16/2017	Noble 11: PRV above Process Water Tank 3
10	MOV_1820.mp4	5/16/2017	Noble 11: Condensate Tank 3
11	MOV_1821.mp4	5/16/2017	Noble 11: PRV above Condensate Tank 3
12	MOV_1822.mp4	5/16/2017	Noble 11: Process Water Tank 1 and Condensate Tank 1
13	MOV_1823.mp4	5/16/2017	Noble 36: Condensate Tank 3
14	MOV_1824.mp4	5/16/2017	Noble 36: Process Water Tank 8
15	MOV_1825.mp4	5/16/2017	Noble 34: PRV above Process Water Tank 6 above negative pressure side
16	MOV_1826.mp4	5/16/2017	Noble 30: Condensate Tank 4
17	MOV_1827.mp4	5/17/2017	Noble 16: Process Water Tank 1
18	MOV_1828.mp4	5/17/2017	Noble 16: PRV above Water Tank 3 at entry of vacuum
19	MOV_1829.mp4	5/17/2017	Noble 16: PRV above Water Tank 3
20	MOV_1830.mp4	5/17/2017	Noble 18: Combustor
21	MOV_1831.mp4	5/17/2017	Nobel 18

Facility Name: CNX Gas Corporation
Facility Location: Various cities, Ohio
Date of Inspection: 5/16/17 and 5/17/17

APPENDIX B: FIELD MEASUREMENT DATA

Image Number	File Name	Location of the PID Reading	PID Reading (ppm)
1	MOV_1811.mp4	Noble 33: Process Water Tank 1/Condensate Tank 1	783/618
2	MOV_1812.mp4	Noble 33: Process Water Tank 2/ Condensate Tank 2	627/354
3	MOV_1813.mp4	Noble 33: Process Water Tank 3/ Condensate Tank 3	302/255
6	MOV_1816.mp4	Noble 11: Process Water Tank 2 Thief Hatch	715
7	MOV_1817.mp4	Noble 11: Condensate Tank 2 Thief Hatch	531
8	MOV_1818.mp4	Noble 11: Process Water Tank 3	622
9	MOV_1819.mp4	Noble 11: PRV above Process Water Tank 3	514
10	MOV_1820.mp4	Noble 11: Condensate Tank 3	492
11	MOV_1821.mp4	Noble 11: PRV above Condensate Tank 3	120
12	MOV_1822.mp4	Noble 11: Process Water Tank 1/Condensate Tank 1	625/433
13	MOV_1823.mp4	Noble 36: Condensate Tank 3	551
14	MOV_1824.mp4	Noble 36: Process Water Tank 8 Thief Hatch/Emergency Hatch	120/1080
16	MOV_1826.mp4	Noble 30: Condensate Tank 4 Thief Hatch	663
17	MOV_1827.mp4	Noble 16: Process Water Tank 1 Thief Hatch	854
18	MOV_1828.mp4	Noble 16: PRV above Water Tank 3 at entry of vacuum	839